

## **Ryan Chouest Data Summary Cruise 6/21/2010**

Review Date 6/22/2010

### **Summary:**

This sampling report presents data collected from the Ryan Chouest for the period of 6/20/2010. Since 1105 hrs 06/20/2010 the Ryan Chouest has sailed on the course as planned. The fluorometers used onboard include the Chelsea (S1), Trios (S2), and the Contros (S3) sensors. These instruments are designed to detect polycyclic aromatic hydrocarbons (PAH's) and sensitive to the ppb-ppm range. Selected water/mousse samples were also examined onboard, using a GCMS to calibrate and ground truth measurements.

*Error: The purple shaded regions on the maps in Figures 1 through 5 (and previous reports) should be labeled "potential oiling footprint" as noted on the ERMA website.*

### **Science results and preliminary interpretation:**

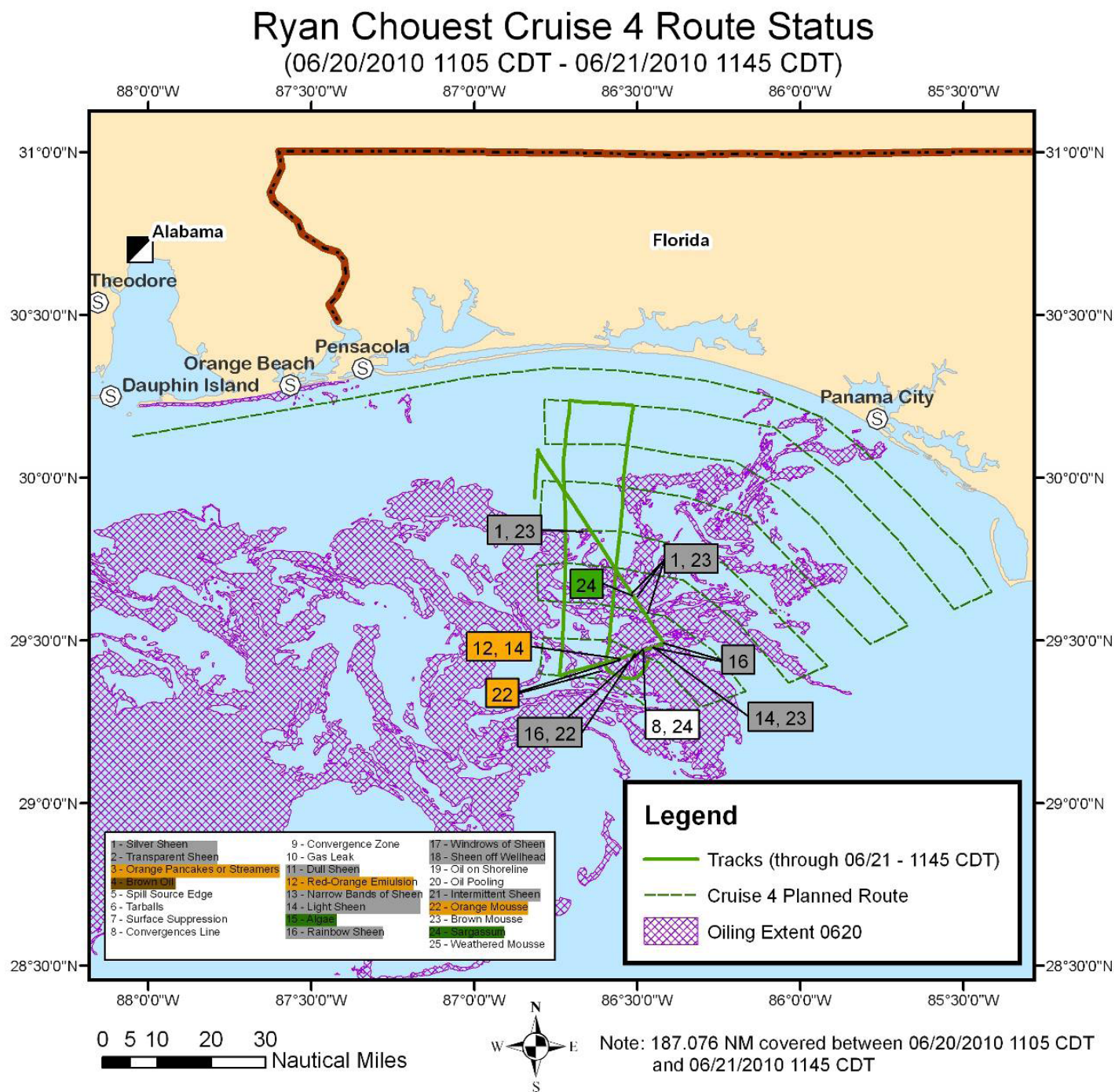
The fluorometer sensors recorded low to medium inferred hydrocarbon concentrations. The Chelsea fluorometer gave the lowest values with the exception of slightly elevated values in the northern part of the transect. The Trios fluorometer recorded low to medium values. As noted in previous reports, the Contros sensor showed the highest values of the three sensors. During this reporting period, there was only partial correlation between the visual observations at the water surface and fluorometry measurements a one to two meters below the surface.

The Ryan Chouest observed a large number of seaweed clumps. In addition, they observed a wide diversity of different types of oil slicks. As reported yesterday, transparent and light surface sheens were by far the most common type of oil slicks observed. Rainbow sheens were also observed, as well as a red-orange emulsion. The rainbow sheens were noted near the denser region of red-orange emulsions, which were restricted to the southernmost part of the transect.

### **Vessel science operations:**

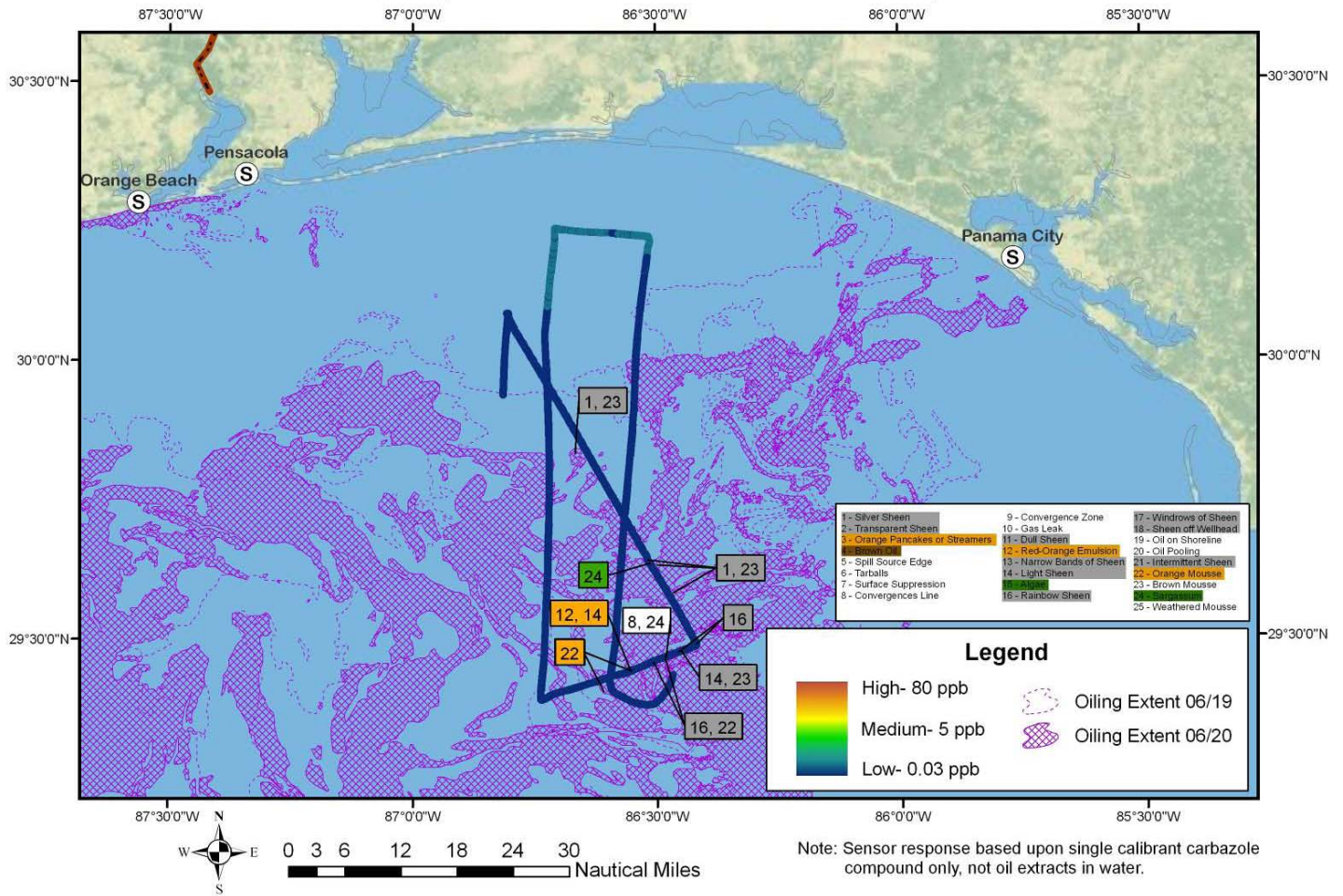
The Ryan Chouest continued to log fluorometer measurements and observe/photo document sea-surface conditions.

## Planned route vs. Actual route taken:



**Figure 1:** Planned versus actual route course plotted between 06/20/2010 –06/210/2010. Purple shaded area represents outline extent of the slick from 06/20 ERMA composite.

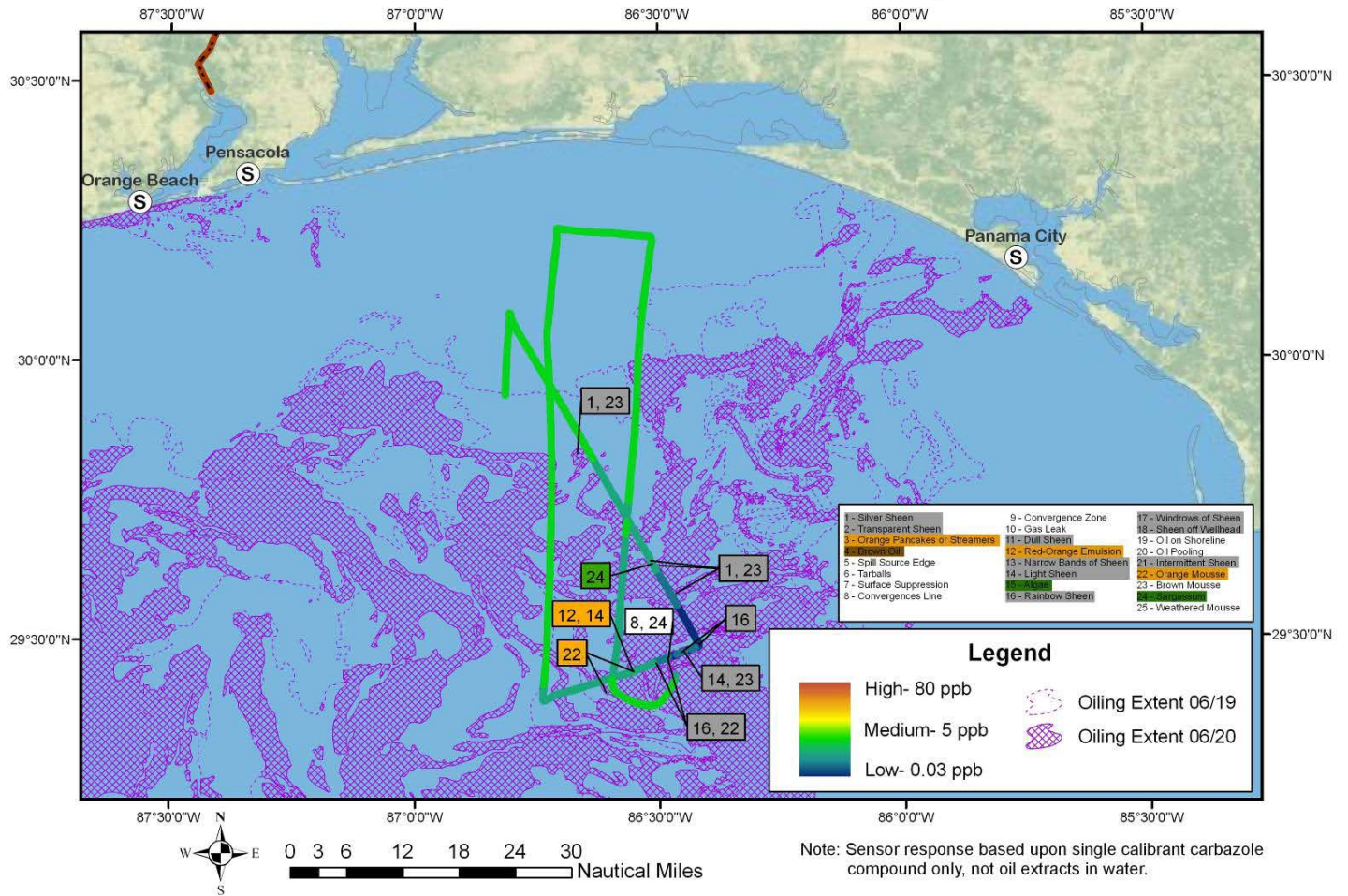
**Ryan Chouest Cruise 4 Data**  
**Chelsea- Fluorometer**  
 (06/20/2010 1105 CDT - 06/21/2010 1145 CDT)



**Figure 2:** Chelsea fluorometer results plotted with location on Cruise 4 track. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

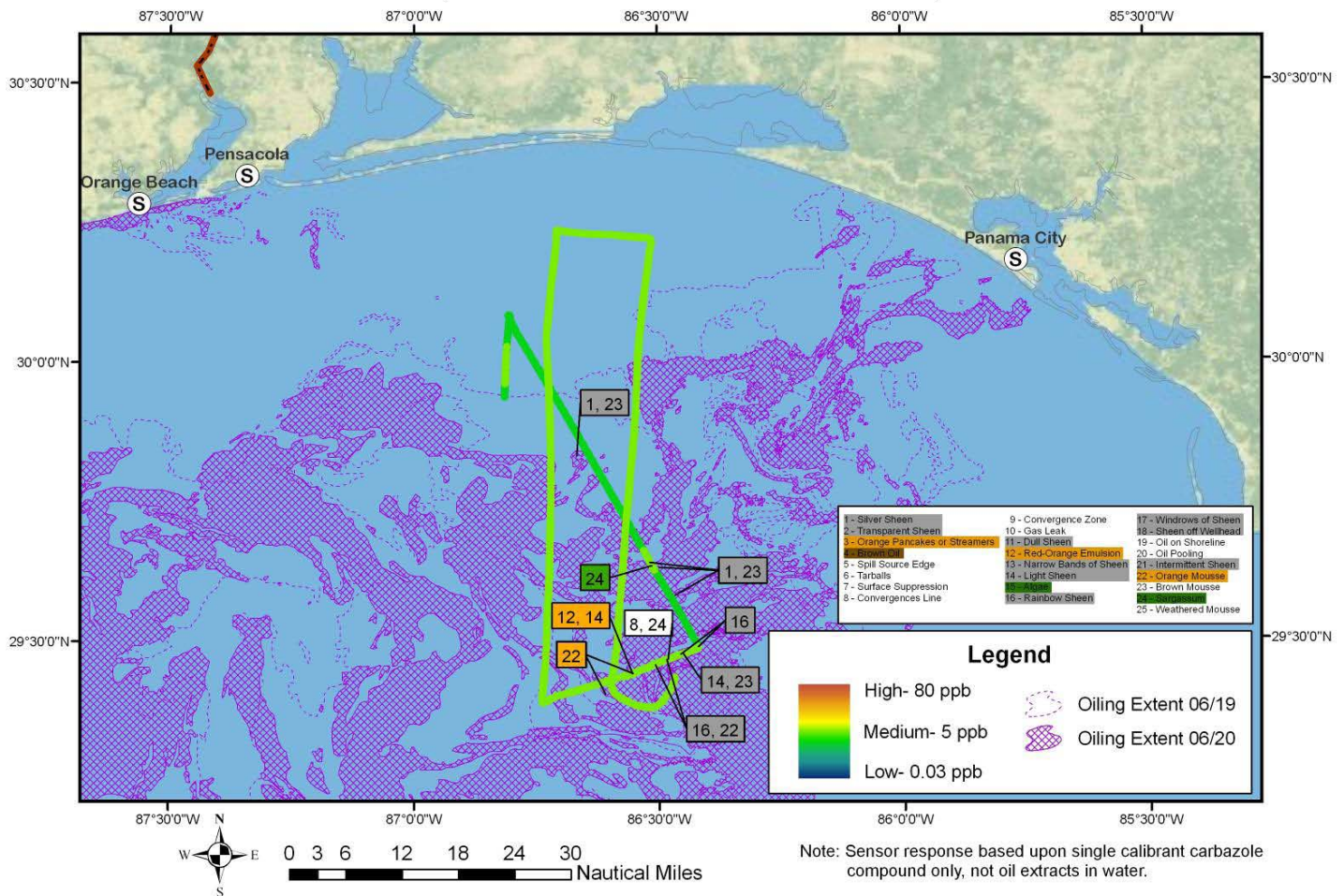


# Ryan Chouest Cruise 4 Data Trios- Fluorometer (06/20/2010 1105 CDT - 06/21/2010 1145 CDT)



**Figure 3:** Trios fluorometer results plotted with location on cruise 4 track. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

# Ryan Chouest Cruise 4 Data Contros- Fluorometer (06/20/2010 1105 CDT - 06/21/2010 1145 CDT)



**Figure 4:** Contros fluorometer results plotted with location on cruise 4 track. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

## Problems/operational issues:

The Ryan Chouest is adjusting the vertical hose/pump system so that they use just one 50m length of power cable. Previous configurations in the casting system had involved several lengths of power cable connected by underwater connectors. These connectors and their splices with the original cable can become detached or shear during retrieval. In this case they will only be able to take a 50m deep cast, but should provide ample length to sample any potentially submerged oil and to full test the casting system. The hose was unraveled this evening and modified for deployment during the day tomorrow.

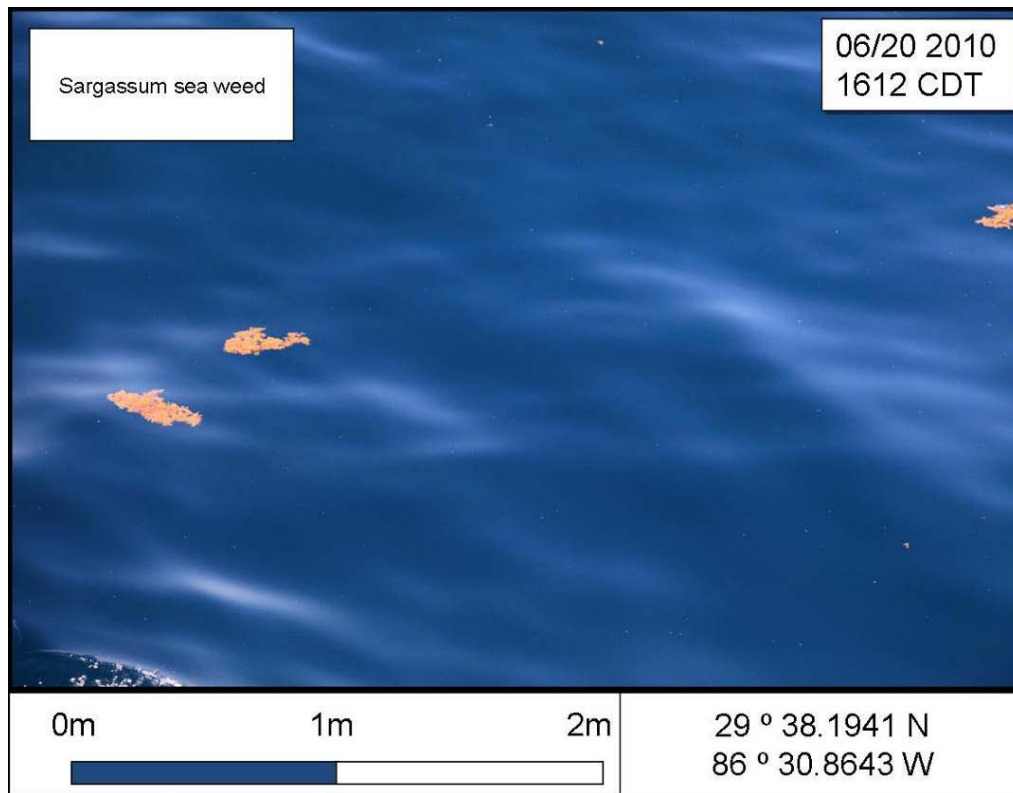
## Planned activities for next 24 hours:

The Ryan Chouest will continue to make transects north to south and collect water/mousse samples at suitable locations.

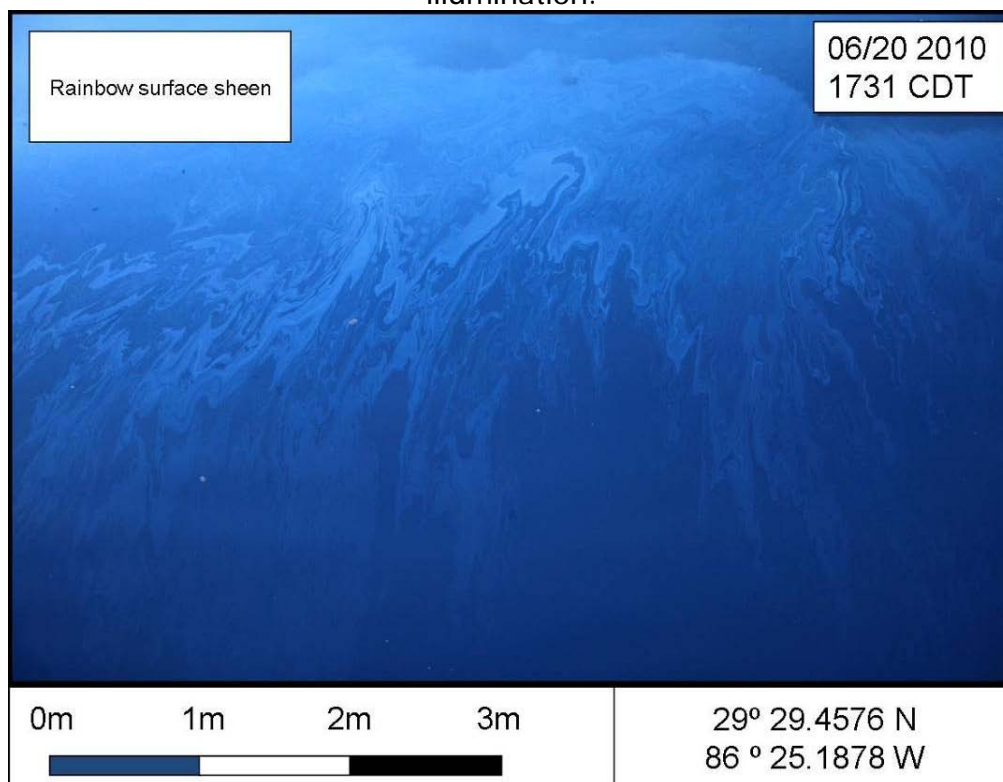


## Photographs

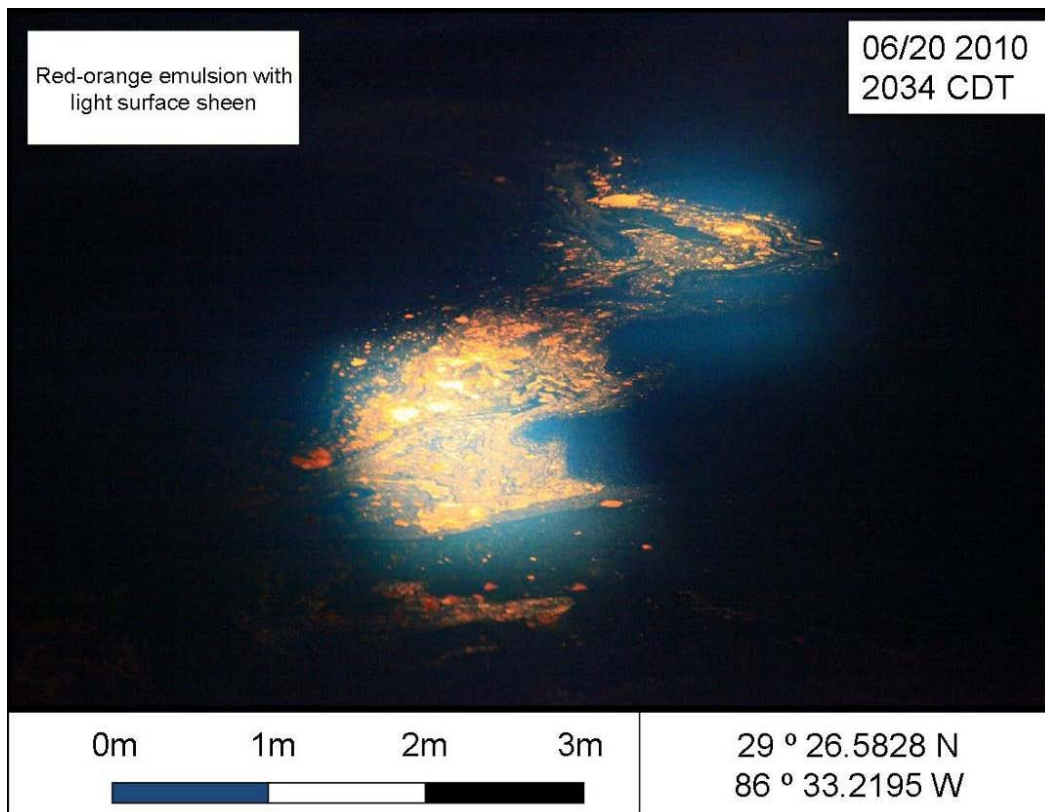
The Ryan Chouest provided the following photographs in their Daily Report:



**Photo 1:** Sargassum seaweed floating on surface sheen. Although seaweed is brownish green up close, it may resemble orange mousse depending on observation distance and angle of solar illumination.



**Photo 2:** Rainbow surface sheen amongst transparent surface sheen.



**Photo 3:** Red-orange emulsion surrounded by light surface sheen. A surface water sample and mousse sample was collected at this station.



**Photo 4:** Example of underwater electrical connectors that pull apart when under tension.